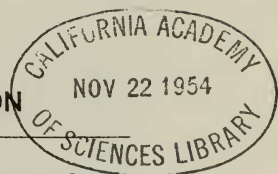


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A NEW SALAMANDER (GENUS *Ambystoma*) FROM
ARIZONA

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The geographic and ecologic distribution of the single species of salamander in Arizona, *Ambystoma tigrinum*, remains poorly known, particularly in the southern part of the state. There is little question that natural local populations still do occur in parts of Pima, Cochise, and Graham Counties at elevations of 4500-5000 feet and above. But, to date, this amphibian is known in the extreme southern part of the state only from Santa Cruz County, and specimens are available from only one locality in this area.

This recently discovered population, in Parker Canyon, near Lochiel, Santa Cruz County, represents an unusually distinctive geographic variant of *A. tigrinum* and is described here as a new subspecies. Both larvae and completely transformed individuals are available. During 1950, when these were first collected by the author, Reed (1951) independently collected larvae at the same locality. It was correctly emphasized by Dunn (1940) that the color pattern of the transformed (metamorphosed) individual forms the only presently intelligible basis for analysis of geographic variation in this species.

*Ambystoma tigrinum stebbinsi** subsp. nov.

Holotype.—Number 665, University of Arizona, Department of Zoology (C. H. Lowe, Jr. No. 3216). Collected November 4, 1950, at J. A. Jones Ranch, in Parker Canyon, southwest side of the Huachuca Mountains, ca. 5000 ft., Santa Cruz County, Arizona, by Charles H. Lowe, Jr.

Diagnosis.—An unusually uniform and distinctive race of *A. tigrinum* with completely transformed individuals characterized by a black ground color on dorsal surfaces, brown on ventral surfaces, and with numerous light golden-brown to yellowish spots of the following size and distribution characteristics: all dorsal spots are less than twice the diameter of the eye; 25-45 spots occur on the *dorsal* body surface between the extreme points of the anterior and posterior limb insertions; those along the lateral and latero-ventral surface of the body and the lateral surface of the tail are conspicuously larger than those on other surfaces, with progressively smaller spots occurring dorsad; the upper surfaces of legs and

*Named for Dr. Robert C. Stebbins, Professor of Zoology and Curator of Amphibians and Reptiles in the Museum of Vertebrate Zoology, University of California, Berkeley, a friend of many years and one who has made unusually outstanding contributions to Herpetology.

tail are with distinct spots rather than bands, bars, or marbling; 35-60 spots occur on the tail (both lateral surfaces, total); a few small golden spots (or none) occur on an otherwise immaculate belly (mid-venter); the chin is boldly spotted, lined, or blotched with golden-yellow; a conspicuous and relatively large spot usually occurs in each axilla.

Description of the holotype (colors and measurements from the fresh specimen).—Completely transformed female, snout-vent length 70.6 mm., tail length 55.2 mm., costal grooves 13/13, counting one each in axilla and groin.

The dorsal surfaces of the head, body, tail, legs, and feet are black. Ventrally and ventro-laterally the ground color is dark brown (near Beaver, Pl. 15, A 7)¹ and partially translucent at the center of the abdomen. There is a gradual gradation on the lateral surfaces from the black of the dorsum to the brown of the ventrum.

Light spots and blotches are numerous on the upper surfaces; all on the dorsal surface proper are smaller than twice the diameter of the eye; 34 spots occur on the dorsal surface of the body between the extreme limits of the anterior and posterior limb insertions. The spots on the dorsal and dorso-lateral surface of the head, body, legs, and feet are yellowish golden-brown (Pl. 13, J 6); 48 spots occur on the lateral surfaces of the tail and are approximately the same yellowish golden-brown. The spots on the lateral and ventro-lateral surfaces of the head and body are light yellow (Pl. 10, F 1). The few spots on the belly and the bold chin markings are also light yellow (near Pl. 10, F 1).

The largest light spots occur on the lateral surface of the compressed tail and on the lateral and ventro-lateral surfaces of the body. A conspicuous oval spot occurs in each axilla. There are 13 small spots on the approximate mid-dorsal line from occiput to base of tail. The belly (mid-ventrally) is immaculate except for 4 very small and inconspicuous golden spots.

Material.—In addition to the type, ten paratypes (transformed individuals) have been available and studied; these are Nos. 666-671 University of Arizona, Department of Zoology, and one each to the following: F. A. Shannon Herpetological Collection, Wickenburg, Arizona; University of California, Museum of Vertebrate Zoology, Berkeley; Chicago Natural History Museum; U. S. National Museum. Reed (1951) distributed larvae to the following: FASHC, Wickenburg, Arizona; MVZ, Berkeley; Chicago Natural History Museum.

Remarks.—The type series is relatively uniform in characteristics and the description of the type serves well for the population as now known.

The following measurements and counts refer to the type series (N = 11); snout-vent length 67-74 (70.6 mm.); 29-43 (35.4) spots on the dorsal body surface between the extreme points of the anterior and posterior limb insertions; 31-57 (43.8) spots on the tail (both lateral surfaces, total). The holotype is close to or at the means of these characteristics for the hypodigm; it has 34 spots on the dorsum, 48 on the tail, and has a snout-vent length of 70.6 mm.

The shape, size, and distribution of the light spots of *A. t. stebbinsi*

¹Color determinations (Pl., etc.) from Maerz and Paul, "A Dictionary of Color," McGraw-Hill Co., 1930.

are sharply distinct from the spotting, blotching, or marbling of *A. t. nebulosum*, *A. t. mavortium*, *A. t. californiense*, and *A. t. velasci*; it is somewhat less distinct from the most geographically distant *A. t. tigrinum*. This race (*stebbinsi*) differs from the others in 100% of the series now available.

The grown larvae of the races of *Ambystoma tigrinum* are more or less uniform dark greenish on upper surfaces and lighter colored below. In *A. t. stebbinsi* the colors are as follows: dorsal surfaces slaty green (Pl. 24, C 1); lateral surfaces dark green (Pl. 24, J 1); ventrally, body very light yellow (Pl. 17, C 1), head somewhat darker.

The change in color pattern is gradual. Spots appear first on the lateral surfaces of the tail. As golden spots develop on the tail, similar ones begin to appear on the body. Concomitant with development of the golden spots there is a progressive change of ground color from greenish to blackish.

The largest larva available has a snout-vent of ca. 55 mm.

Distribution.—*A. t. stebbinsi* is known only from the type locality in Parker Canyon, approximately 3.5 miles north of the Mexican border, Santa Cruz County, Arizona. The habitat is in open Oak-Grassland at ca. 5000 ft. The small pond is semi-permanent, with relatively clear water, a mucky bottom, and a maximum depth of 5-6 feet.

Parker Canyon drains southward into the San Rafael Valley and the upper reaches of the Santa Cruz River, both of which are crossed by the International boundary in the vicinity of Lochiel, Arizona. This race is to be expected in Sonora and in adjacent parts of southern Arizona and southwestern New Mexico, areas which remain inadequately explored for ambystomids.

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